NAME _____ DATE _____ PERIOD _____

M7A Chapter 5 Practice Test

For Exercises 1 and 2, refer to the table below.
The table shows the heart rates and masses of different animals.

Animal	Heart Rate (beats/min)	Mass (g)
cat	150	2000
cow	66	800,000
hamster	450	60
horse	44	1,200,000

1. Express the ratio of a cow's heart rate to a hamster's heart rate as a fraction in simplest form. **1.** _____

2. Express the ratio of the mass of a cat to the mass of a cow as a fraction in simplest form. **2.** _____

3. A 4-gallon jug of milk costs \$5.60. At what price should a $\frac{1}{2}$-gallon jug be sold in order for the unit rate for both containers to be the same? **3.** _____

4. A boat dock measures 14 meters in length. Use a conversion factor to write this length to the nearest tenth of a foot. (1 foot = 0.3 meters) **4.** _____

5. Auggie began working on a computer program. After $7\frac{1}{5}$ hours, he had completed $20\frac{1}{10}$ lines of code. What was his unit rate of programming in lines of code per hour? **5.** _____

6. Joel works as an auditor and earns \$36,920 per year. What is Joel's weekly earnings? **6.** _____

7. Is the following statement true or false? Explain your reasoning. **7.** _____

$$\frac{\frac{3}{4}}{\frac{2}{16}} = \frac{36}{6}$$

8. Write and solve a proportion to solve for *x*.

3 ounces of perfume for \$105
7 ounces of perfume for *x* **8.** _____

9. Ryan is building a model of the Texas Capitol Building. He is using a scale of 2 inches = 5 meters. What is the height of the model if the Texas Capitol Building is 95 meters high? **9.** _____

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For Exercises 10 and 11, determine whether the set of numbers in each table is proportional. If the relationship is proportional, determine the constant of proportionality.

10.

Birds	1	2	3	4
Beaks	1	2	3	4

10. _____

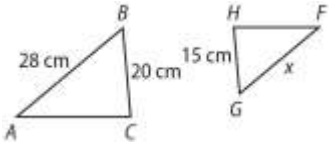
11.

Number of Pizzas	2	4	6	8
Number of Slices	16	32	60	64

11. _____

For Exercises 12 and 13, $\triangle ABC \sim \triangle FGH$.

12. Find the value of x.



12. _____

13. If $m\angle A = 50°$ and $m\angle B = 45°$, what is $m\angle H$?

13. _____

14. At the same time a 5-foot person casts a 2.5-foot shadow, a nearby tree casts an 8-foot shadow. How tall is the tree?

14. _____

15. On a set of blueprints for a house, the scale is $\frac{1}{2}$ inch = 4 feet.

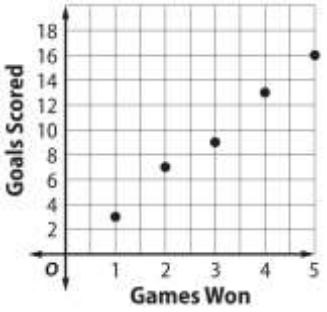
a. Find the actual length of a room that measures 3.2 inches on the blueprint.

b. Suppose an architect is updating the blueprints and decides to use a different scale. An actual length of 30 feet is drawn on the new blueprint as 4 inches. Complete the ratio for the new scale.

$\frac{1}{2}$ inch = ☐ feet

15. _____

16. Explain a method for determining if the relationship shown in the graph is proportional.



16. _____